## AMENDMENTS TO THE CLAIMS

1.   (CURRENTLY AMENDED) An apparatus comprising:

a̶ an external memory;

a first circuit configured to (i) copy a plurality of first reference samples of a first reference image from said

5   external memory, said first reference samples being proximate a first offset from a first corner of said first reference image and (ii) generate a first motion vector corresponding to a first current block of a current image by searching among said first reference samples; and

10   a second circuit configured to (i) copy a plurality of second reference samples of said first reference image from said external memory, said second reference samples being proximate a second offset from said first corner of said first reference image, said second offset being different than said first offset and said

15   second reference samples being non-adjacent said first reference samples and (ii) generate a second motion vector corresponding to said first current block by searching among said second reference samples,

wherein (i) said first offset comprises a small offset

20   pointing to a first position in said first reference image, said first position being approximately co-located with a center of said first current block g̶e̶n̶e̶r̶a̶t̶e̶d̶ ̶f̶r̶o̶m̶ ̶a̶ ̶s̶t̶i̶l̶l̶ ̶r̶e̶g̶i̶o̶n̶ ̶o̶f̶ ̶s̶a̶i̶d̶ ̶c̶u̶r̶r̶e̶n̶t̶

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~~image~~ and (ii) said second offset comprises a large offset <u>pointing</u>

<u>to a second position in said first reference image, said second</u>

25   <u>position being distant from said first position and said second</u>

<u>position corresponding to a global offset associated with fast</u>

<u>moving data in said current image</u> ~~generated from a moving region of~~

~~said current image~~.


2.   (CURRENTLY AMENDED) The apparatus according to claim

1, wherein said first circuit comprises a search memory (i) having

a read port and a write port, said write port being separate from

said read port and (ii) configured to store said first reference

5   samples copied from said <u>external</u> memory.


3.   (CANCELED).


4.   (CURRENTLY AMENDED) The apparatus according to claim

2, wherein said first circuit further comprises ~~a~~ <u>an external</u> read

control circuit configured to generate a first read address to read

from said <u>external</u> memory.


5.   (ORIGINAL) The apparatus according to claim 4,

wherein said first circuit further comprises a write control

circuit configured to generate a write address to write to said

search memory.


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6.    (PREVIOUSLY PRESENTED) The apparatus according to claim 5, wherein said first circuit further comprises an internal read control circuit configured to generate a second read address to read from said search memory.

7.    (CURRENTLY AMENDED) The apparatus according to claim 1, wherein said first circuit is further configured to (i) copy a plurality of third reference samples of said first reference image from said <u>external</u> memory and (ii) generate a third motion vector corresponding to a second current block of said current image by searching among said third reference samples and at least a <u>first</u> portion of said first reference samples<u>, said second current block being horizontally adjoining said first current block in said current image</u>.

8.    (CANCELED).

9.    (CURRENTLY AMENDED) The apparatus according to claim 7, wherein said third reference samples are spatially adjoining said first reference samples <u>in said first reference image</u>.

10.    (CURRENTLY AMENDED) The apparatus according to claim 1, further comprising:

a third circuit configured to (i) copy a plurality of third reference samples of a second reference image from said external memory, said third reference samples having a third offset from a second corner of ~~a~~ said second reference image and (ii) generate a third motion vector corresponding to said first current block by searching among said third reference samples.

11. (CURRENTLY AMENDED) A method for motion estimation, comprising the steps of:

(A) copying a plurality of first reference samples of a first reference image from ~~a~~ an external memory to a first circuit, said first reference samples having a first offset from a first corner of said first reference image;

(B) generating a first motion vector corresponding to a first current block of a current image by searching among said first reference samples using said first circuit;

(C) copying a plurality of second reference samples of said first reference image from said external memory to a second circuit, said second reference samples being proximate a second offset from said first corner of said first reference image, said second offset being different than said first offset and said second reference samples being non-adjacent said first reference samples; and

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(D) generating a second motion vector corresponding to said first current block by searching among said second reference samples using said second circuit, wherein (i) said first offset comprises a small offset <u>pointing to a first position in said first reference image, said first position being approximately co-located with a center of said first current block</u> ~~generated from a still region of said current image~~ and (ii) said second offset comprises a large offset <u>pointing to a second position in said first reference image, said second position being distant from said first position and said second position corresponding to a global offset associated with fast moving data in said current image</u> ~~generated from a moving region of said current image~~.

12. (CANCELED).

13. (CANCELED).

14. (CURRENTLY AMENDED) The method according to claim <u>19</u> ~~13~~, wherein said third references samples <u>spatially</u> adjoin said first reference samples in said first reference image.

15. (PREVIOUSLY PRESENTED) The method according to claim 19, wherein the steps of generating said first motion vector and

copying said third reference samples are performed substantially simultaneously.

16.    (CURRENTLY AMENDED) The method according to claim 19, further comprising the steps of:

overwriting some of said first reference samples with a plurality of fourth reference samples of said first reference image copied from said external memory; and

generating a fourth motion vector corresponding to a third current block of said current image by searching among said fourth reference samples, said third reference samples and at least a second portion of said first reference samples, said third current block being horizontally adjoining said second current block in said current image.

17.    (CANCELED).

18.    (CANCELED).

19.    (CURRENTLY AMENDED) The method according to claim 11, further comprising the steps of:

copying a plurality of third reference samples from said external memory to said first circuit and

5          generating a third motion vector corresponding to a second current block of said current image by searching among said third reference samples and at least a first portion of said first reference samples, <u>said second current block being horizontally adjoining said first current block in said current image</u>.


20. (CURRENTLY AMENDED) An apparatus comprising:

means for storing a first reference image;

means for (i) copying a plurality of first reference samples of said first reference image from said means for storing,

5     said first reference samples being proximate a first offset from a first corner of said first reference image and (ii) generate a first motion vector corresponding to a first current block of a current image by searching among said first reference samples; and

means for (i) copying a plurality of second reference

10    samples of said first reference image from said means for storing, said second reference samples being proximate a second offset from said first corner of said first reference image, said second offset being different than said first offset <u>and said second reference samples being non-adjacent said first reference samples</u> and (ii)

15    generating a second motion vector corresponding to said first current block by searching among said second reference samples, wherein (i) said first offset comprises a small offset <u>pointing to a first position in said first reference image, said first position</u>

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being approximately co-located with a center of said first current block ~~generated from a still region of said current image~~ and (ii) said second offset comprises a large offset pointing to a second position in said first reference image, said second position being distant from said first position and said second position corresponding to a global offset associated with fast moving data in said current image ~~generated from a moving region of said current image~~.

21.    (CURRENTLY AMENDED) The apparatus according to claim 1, wherein said first offset comprises a zero offset generated from ~~said~~ a still region of said current image.

22.    (CURRENTLY AMENDED) The apparatus according to claim 1, further comprising a memory sub-system configured to control communication between (i) said external memory and said first circuit and (ii) said external memory and said second circuit.

23.    (CURRENTLY AMENDED) The method according to claim 11, further comprising the steps of:

copying a plurality of third reference samples of a second reference image from said external memory to a third circuit, said third reference samples having a third offset from a second corner of ~~a~~ said second reference image; and

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generating a third motion vector corresponding to said first current block by searching among said third reference samples using said third circuit.

24. (PREVIOUSLY PRESENTED) The method according to claim 23, wherein (i) said first motion vector comprises a forward prediction and (ii) said third motion vector comprises a backwards prediction.

25. (CURRENTLY AMENDED) The method according to claim 11, wherein said first offset comprises a zero offset generated from ~~said~~ a still region of said current image.

26. (NEW) The apparatus according to claim 7, wherein generation said first motion vector and copying said third reference samples are performed substantially simultaneously.

27. (NEW) The apparatus according to claim 7, wherein the first circuit is further configured to (i) overwrite some of said first reference samples with a plurality of fourth reference samples of said first reference image copied from said external memory and (ii) generate a fourth motion vector corresponding to a third current block of said current image by searching among said fourth reference samples, said third reference samples and at least

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a second portion of said first reference samples, said third

current block being horizontally adjoining said second current

10    block in said current image.